



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

646.3310

Job Sheet 171160



Part No: 646.3310

Job Qty: 11 ea

Part Name: LH Half - Upper Cutter Assembly



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 1/29/18

Job Tracking No: see also open job 171159

Due Date: 2/28/18

Created By: Michelle Gagnon-Donovan

Type: Stock

Description:

Note: DWG REV A IPP REV:A NEW ISSUE 12/11/17 JFS VERIFY BY: JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	11 Ea	2/27/18	2/27/18	0.00	0.00	Start Up Machining-1		Kt 18-03-12
110	CNC Vertical Machining	11 pcs	2/28/18	2/28/18	0.44	14.47	HAAS1-1		Kt 18-03-12
120	QC	11 pcs	2/28/18	2/28/18	0.00	0.00	QC2 Machining-1		Kt 18-03-12
130	QC	11 pcs	2/28/18	2/28/18	0.00	0.00	QC8 Machining-1		AT 18-03-12
140	Outsource	11 pcs	2/28/18	2/28/18			ATG001-VC	10	AT 18-03-12
150	Packaging	11 pcs	2/28/18	2/28/18	0.00	0.00	Packaging2		AT 18-03-12
155	QC	11 pcs	2/28/18	2/28/18	0.00	0.00	QC5		DAS 11 APR 11 2018
180	Packaging	11 pcs	2/28/18	2/28/18	0.00	0.00	Packaging3-1		6 9-89 APR 11 2018
190	QC21-SA	11 Ea	2/28/18	2/28/18	0.00	0.00	QC21		9-89

Part Op 110 - 1-Machine per folio FB154 Blank 13.375

Descriptions: 140 - Issue P/O to ATG : 100393261 - Black Anodize as per Dwg 646.3300

180 - ***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***

DAS
21
9-89

APR 12 2018

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
M7075T6S7.000X2.000	7075-T6S Sheet 7" Thick Plate X 2" Wide	12.2650 ft (1.115 ea)	90-Start up Operation	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	M7075T6S7.000X2.000	12	0	0

10 x SO17382
213.3/8

1 x SO43347

Mh10



Container No: 8049980



Part: 646.3310

Job No: 171160

Serial No/Batch: 8049980

Revision:

Inspector:

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 813 832-8200
Email: sales@dartaero.com
www.dartaerospace.com

Date: 03/12/18

Part Specifications					
Spec No	Description	Target/Tolerance	Limits	Type	Special Comments
1	LH Half	7.296inches $\pm$ 0.005	7.301 7.291		
2	LH Half	3.767inches $\pm$ 0.005	3.772 3.762		
3	LH Half	0.457inches $\pm$ 0.005	0.462 0.452		
4	LH Half	0.313inches $\pm$ 0.005	0.318 0.308		
5	LH Half	0.710inches $\pm$ 0.005	0.715 0.705		
6	LH Half	6.469inches $\pm$ 0.005	6.474 6.464		
7	LH Half	10.116inches $\pm$ 0.005	10.121 10.111		
8	LH Half	10.309inches $\pm$ 0.005	10.314 10.304		
9	LH Half	0.177inches $\pm$ 0.005 - 0.001	0.182 0.176	Diameter	
10	LH Half	0.209inches $\pm$ 0.005 - 0.001	0.214 0.208	Diameter	
11	LH Half	0.250inches $\pm$ 0.005	0.255 0.245		
12	LH Half	1.250inches $\pm$ 0.005	1.255 1.245		
13	LH Half	0.125inches $\pm$ 0.005	0.130 0.120	Radius	
14	LH Half	3.513inches $\pm$ 0.005	3.518 3.508		
15	LH Half	8.375inches $\pm$ 0.005	8.380 8.370		
16	LH Half	0.250inches $\pm$ 0.005	0.255 0.245		
17	LH Half	8.100Degrees $\pm$ 0.500	8.600 7.600	Angle	
18	LH Half	11.689inches $\pm$ 0.005	11.694 11.684		
19	LH Half	11.250inches $\pm$ 0.005	11.255 11.245		
20	LH Half	0.200inches $\pm$ 0.005	0.205 0.195		
21	LH Half	45.000Degrees $\pm$ 0.000	45.000 45.000	Angle	

Plex 1/29/18 3:46 PM Dart.Gagnon.Michelle

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QS1042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					



APICAL INDUSTRIES, INC.
dba DART AEROSPACE

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

ENGINEERING CHANGE NOTICE NO.

05708

SHEET 1 OF 1

DWG NO. 646.3300

REV: N/C

PREPARED
BY

A. QUAN

DATE: 02/21/17

EFFECT ON DWG
☒ INC. ☐ UNINC.

DWG TITLE: UPPER CUTTER ASSY

APPROVED BY:

ENGR *[Signature]*

MFG

[Signature]

QC

[Signature]

EFF:

NEXT ORDER

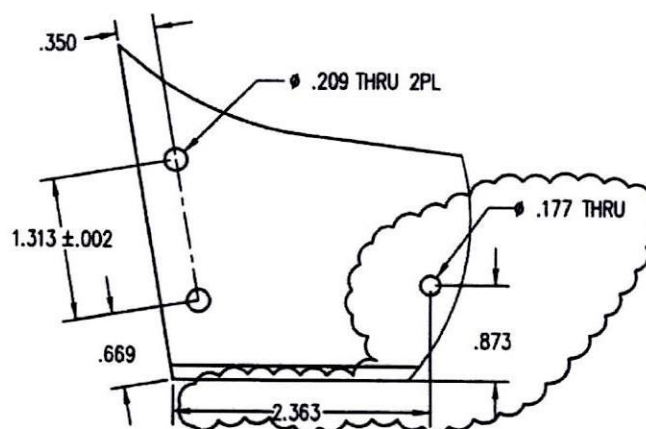
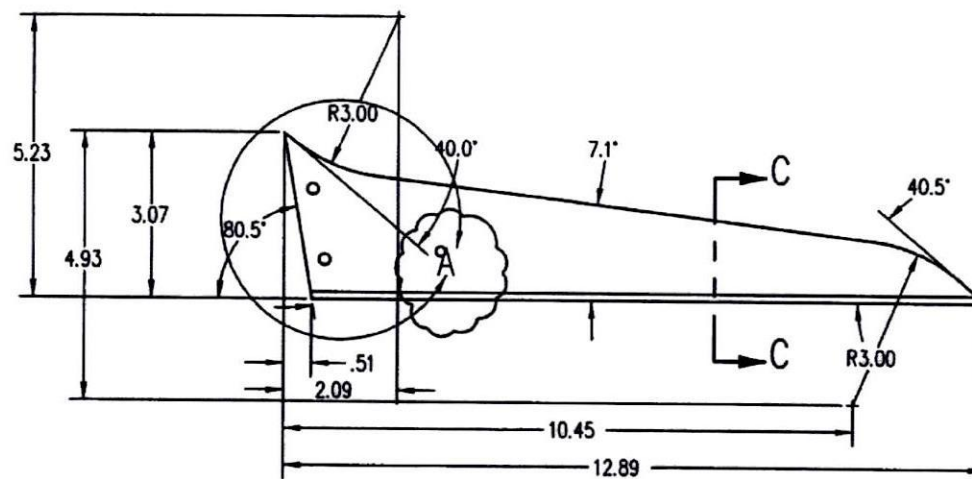
REASON: REMOVED HOLE IN UPPER CUTTER DEFLECTOR.
INCORPORATED ECNS 02196, 03724, 04765.

ECR:

17-005

ACTION LIST:
1. N/A

SHEET 5, ZONE A2-D2 WAS:



DETAIL A

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 171160 *[Signature]*

JAN 31 2018

DOCUMENTS EFFECTED:

☐ PATTERN

☐ MDL

☐ INSTALL INSTRUC

☐ ICA

☐ BOM

CHANGE CATEGORY

☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED

☐ YES

☒ NO

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
N/C	INITIAL RELEASE	08/26/08	P. BRAVO
A	INCORPORATED ECHS 0219L, 0372L, 0476L & 0570L	02/21/17	P. BRAVO

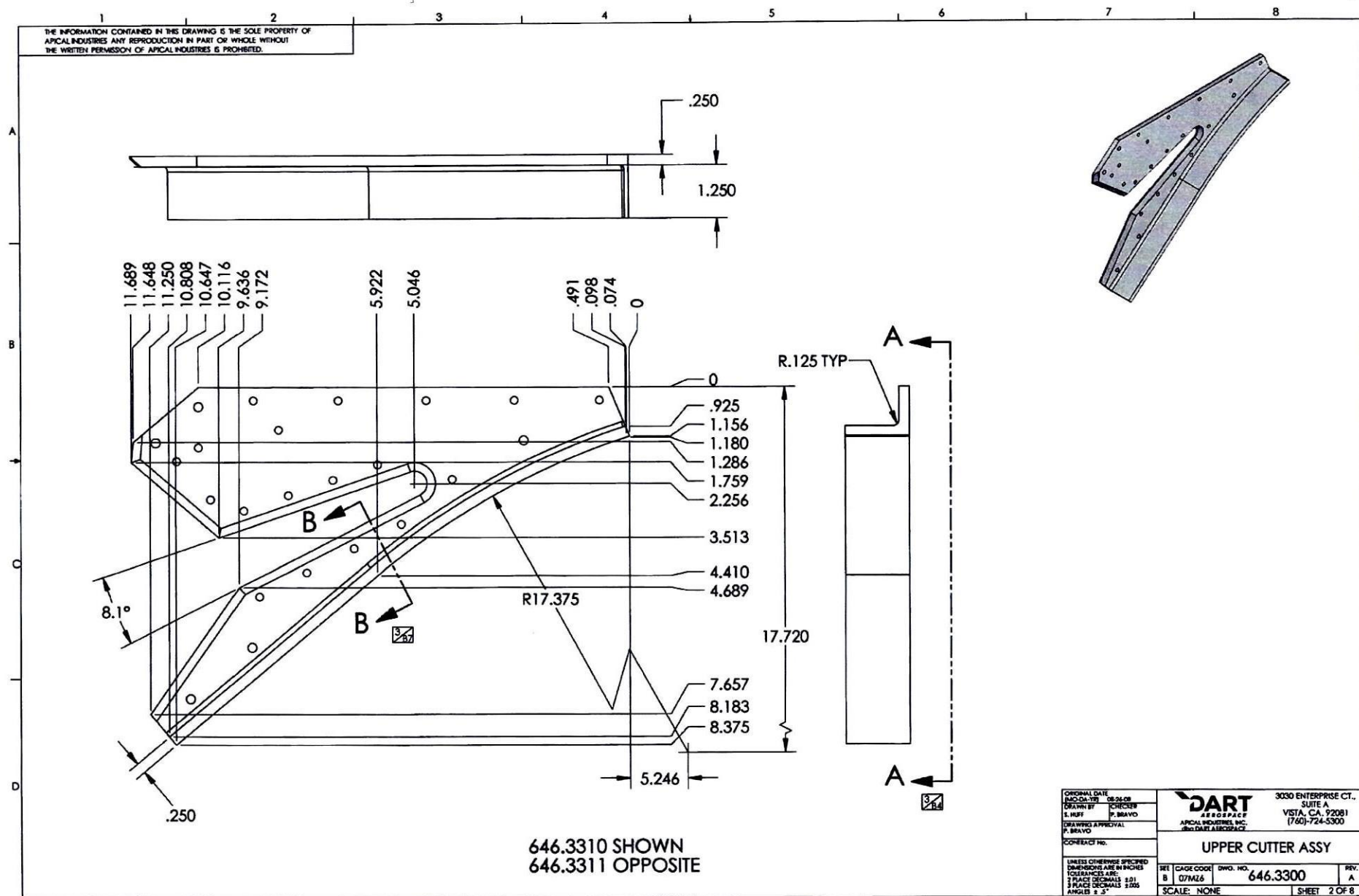


- ① MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- ② FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III,
CLASS 2, COLOR BLACK;
CARDINAL 4860-50 PRETREATMENT PRIMER
PRIME IAW MIL-P-23377 J TYPE I CLASS N
- ③ MATERIAL: AISI A2 TOOL STEEL
CONDITION: ANNEALED
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS
- ④ FINISH: PRIME IAW MIL-P-23377 J TYPE I CLASS N
5. DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
6. IDENTIFY IAW MPP-120
- ⑦ APPLY F/N 15 AS REQUIRED TO ALL FAYING SURFACES OF F/N 5, 6 & 7 UPON ASSEMBLY
- ⑧ CUTTING EDGE INTENDED TO BE SHARP, DO NOT BREAK SHARP EDGE
- ⑨ INSTALL FASTENER FINGER-TIGHT

646.3301
SHOWN EXPLODED

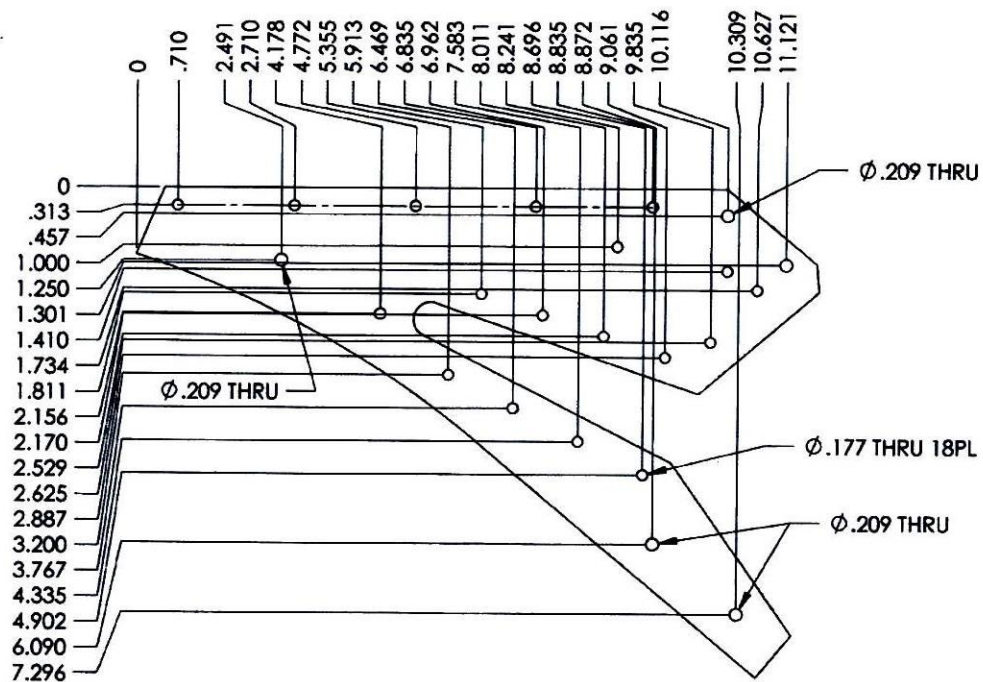
		1	6	601.2834	BOLT		ANS-1A		
	A/R	15	601.2045	RTV, LOCITE 598					
	18	14	601.2765	SCREW		M52709P-0819			
	3	13	601.1624	LOCKNUT		M52104ZL3			
	2	12	601.2763	BOLT		ANS-1A			
	6	11	601.1607	WASHER		NAS1149F03ZXP			
	18	10	601.1541	LOCKNUT		M52104ZL3			
		9		DELETED					
	36	8	601.2764	WASHER		NAS1149H8ZXP			
	1	7	646.3316	BLADE		▲		▲	
	1	6	646.3315	BLADE		▲		▲	
	1	5	646.3314	BLADE		▲		▲	
	1	4	646.3313	UPPER GUIDE		▲		▲	
	1	3	646.3312	CENTER PLATE		▲		▲	
	1	2	646.3311	RH HALF		▲		▲	
	1	1	646.3310	LH HALF		▲		▲	
	X		646.3301	UPPER CUTTER ASSY		▲			
	QTY	FIND #	PART #	DESCRIPTION	MAT'L	SPEC.			
	NEXT ASSY (S)			PARTS LIST					
	646.4000			DART AEROSPACE AFICAL INDUSTRIES INC. CINCINNATI, OHIO 45215			3030 ENTERPRISE CT., SUITE A VISTA, CA 92081 (760) 724-5300		
				UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 1 PLACE DECIMALS ± .01 2 PLACE DECIMALS ± .005 ANGLES .5°	REV B CAGE CODE 07MZ6 SCALE NONE	DWG. NO. 646.3300		REV A	1 OF 1

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF
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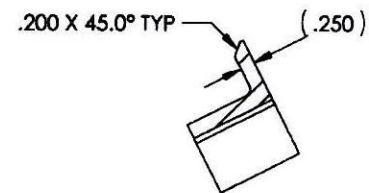


GOMINAL DATE (BMO-DA-12) 06-26-08 DRAWN BY CHECKED D. HURT P. BRAVO DRAWING APPROVAL P. BRAVO			3030 ENTERPRISE CT., SUITE A VISTA, CA 92081 (760)-724-5300
CONTRACT NO.		UPPER CUTTER ASSY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 1 3 PLACE DECIMALS ±.01 2 3 PLACE DECIMALS ±.005			
SET 1	CASE CODE 07M6L	DIMO. NO. 646.3300	REV. A
SCALE: NONE		SHEET 2 OF 8	

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF
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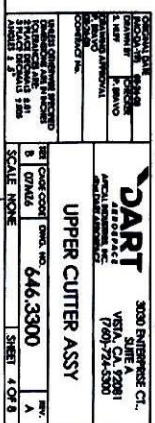
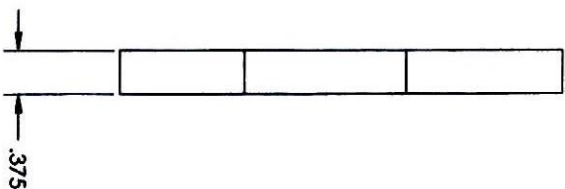
SECTION A-A



SECTION B-B

ORIGINAL DATE 8/20/88		3030 ENTERPRISE CT., SUITE A VISTA, CA. 92081 (760)-724-5300	
DRAWN BY J. HUNT		DART AEROSPACE APICAL INDUSTRIES, INC. A DART COMPANY	
CHECKED BY P. BRAVO		UPPER CUTTER ASSY	
CONTRACT NO.		REV. A	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS .010 2 PLACE DECIMALS .005 1 PLACE DECIMALS .005		SHEET 8	DWG. NO. 646.3300
SCALE NONE		SHEET 3 OF 8	

A vertical scale with tick marks and numbers 1 through 8, increasing from top to bottom.





Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **PO039326**

Supplier: ATG001-VC
A.T.G. Industries Inc
731 INDUSTRIELLE ROAD
ROCKLAND
ON
K4K 1T2 Canada
Phone: 613-446-4544
Fax: 613-446-4556

Attention: Lalande, Marc-Andre

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: PO039326
PO Date: 3/15/18
Due Date: 3/30/18
Purchase Order Revision:
Revision Date:
Ship-To Contact: Tsimiklis, Chrisoula Phone:

Via: Ground
Pynt Terms: Net 30
Freight Terms:
Special Comments:

Items

Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	170456	646.3311	RH Half - Upper Cutter Assembly Issue P/O to ATG : _____	Firmed	3/30/18	4 pcs	4 pcs	4 pcs	\$24.62/pcs	\$98.48
2	172994	D5576-1	Deflector, Upper Cable Cutter Issue P/O to ATG : _____ Black Anodize & Prime as per Dwg. D5576 Certification of Conformity is required.	Firmed	3/30/18	2 pcs	0 pcs	2 pcs	\$16.22/pcs	\$32.44
3	172993	D5575-1	Deflector, Lower Cable Cutter Issue P/O to ATG : _____ Black Anodize & Prime as per Dwg. D5575-1 Certification of Conformity is required.	Firmed	3/30/18	2 pcs	0 pcs	2 pcs	\$15.02/pcs	\$30.04
4	170455	646.3310	LH Half - Upper Cutter Assembly Issue P/O to ATG : _____ 1- Black Anodize as per Dwg 646.3300	Firmed	3/30/18	4 pcs	4 pcs	4 pcs	\$24.62/pcs	\$98.48
5	171160	646.3310	LH Half - Upper Cutter Assembly Issue P/O to ATG : _____ 1- Black Anodize as per Dwg 646.3300	Firmed	3/30/18	11 pcs	0 pcs	11 pcs	\$24.62/pcs	\$270.82
Grand Total:										\$530.26

Order Notes

CT.

DAS
11
9-89



A.T.G. Industries Inc.
731 Industrielle Street
Rockland, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 914893

Date: 06-Apr-18

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

Chantal Lavoie
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via	
		OUR TRUCK	
Quantity	Description		
	Please reference this document's Pack List number on all correspondences regarding this shipment. If you have any questions, please contact us.		
4 ea	Part: 646.3311 RH Half Upper Cutter Assembly Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils) per drawing. Job: 22752	Rev: A	PO: PO039326 Line: 1
4 ea	Part: 646.3310 LH Upper Cutter Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils) per drawing. Job: 22755	Rev: A	PO: PO039326 Line: 4
11 ea	Part: 646.3310 LH Upper Cutter Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils) per drawing. Job: 22756	Rev: A	PO: PO039326 Line: 5
CERTIFICATE OF CONFORMANCE A.T.G Industries Inc. certifies that all items in this shipment conform to the requirements. Date: <u>6/4/18</u> Certified Signature: <u>[Signature]</u> Receiver Signature: _____ A.T.G Industries Inc. is AS9100 Registered and Nadcap Chemical Processing Accredited. Note: This Packing Slip may contain parts that have been PLATED. Items that are plated may be subject to natural tarnishing and it is suggested that they be inspected within 24 hours of Made in Canada.			